Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

FINAL
Administrative Revision/Conditional Major, Construction / Operating
Permit: F-08-023 R1
Equitable Gathering, LLC, Wildcat Station
Fisty, KY 41743
Date: February 27, 2009
Sukhendu K. Majumdar, Reviewer

SOURCE ID:	21-119-00043
AGENCY INTEREST:	84803
ACTIVITY:	APE20090001

Permit F-08-023 R1:

On January 29, 2009 Equitable Gathering, LLC submitted an administrative revision application to the Division for the mailing address change. Permit revision F-08-023 R1 incorporates the address change as requested.

SOURCE DESCRIPTION:

On May 13, 2008 Equitable Gathering, LLC submitted an air permit application to the Division for installation of a new natural gas compressor and emergency generator replacement engine at an existing natural gas compressor station in Knott County near Fisty, Kentucky (Wildcat Station). The Station's current operating permit is under Kentucky West Virginia Gas Company, LLC. Ownership has since transferred to Equitable Gathering, LLC. In the application the permittee requested to change the ownership name to Equitable Gathering, LLC. The station is used to compress natural gas as it is being shipped via pipeline. The station presently consists of two natural gas fired engines, a glycol dehydrator with associated natural gas-fired reboiler, a natural gas-fired emergency engine and eight (8) small storage tanks with less than 10,000 gallons capacity and storing low vapor pressure (< 1.5psi) liquid material.

Equitable Gathering in the application requested to install one new natural gas-fired 2,370 HP compressor and an emergency generator, rated at 450 kW to replace the existing emergency generator. The addition of the compressor engine will increase the throughput capacity for the glycol dehydration unit from 18 million standard cubic feet (mmscf) per day of natural gas to 25 mmscf per day. The compressor station at the Wildcat facility after installation of new engines, will consist of the following emission units:

- Two natural gas-fired Caterpillar G3516TALE compressor engines, each installed in 2007 and rated at a brake horsepower (bhp) of 1,340;
- One natural gas-fired Caterpillar G3608TALE compressor engine proposed to install in 2008 and rated 2,370 brake horsepower (bhp). An emergency generator

(Caterpillar 3412 TA) rated at 450 kW or 650 HP will be installed in 2008 to replace existing emergency generator.

- One NATCO glycol dehydration unit, installed in 2007 and would treat 25 million standard cubic feet per day (mmscfd) of compressed natural gas. The emissions from this unit are controlled by a flare;
- One natural gas-fired reboiler with maximum heat capacity of 0.50 mmBtu/hr;
- Tanks#1 and #2, storing pipeline condensate and having a maximum capacity of 8,820 gallons each;
- Tank #3, storing compressed lube oil and having a maximum capacity of 4,410 gallons;
- Tanks #4 and #5, storing antifreeze and having a maximum capacity of 2,184 and 924 gallons, respectively;
- Tank #6, storing triethylene glycol and having a maximum capacity of 1,008 gallons;
- Tanks #7 and #8, storing used oil and having a maximum capacity of 1,974 gallons, each.

Source Classification:

The Wildcat Station is located in Knott County, which has been designated as an attainment for all criteria pollutants. In federal New Source Review permitting programs, only Prevention of Significant Deterioration (PSD) could potentially apply to the facility. Natural gas compressor stations are not on the list of 28 PSD source categories defined at 401 KAR 51:001, Section 1 (120)(a)(1)(b) for which the major source threshold is 100 tpy. Thus, the major source threshold for the regulated pollutants under the PSD program for the station is 250 tpy. The potential emissions of each regulated pollutant, uncontrolled, are less than 250tpy. As such the facility at Wildcat Station would be classified as minor source under PSD program. The source-wide potential emissions of each pollutant after the proposed modification would continue to be less than 250 tpy. Therefore, the PSD requirements will not apply and the Station will be minor source for PSD.

Type of control and efficiency:

The Wildcat Station has one pilot assisted flare that controls emissions from the existing Dehydration Unit. The design efficiency of the flare is 98%, but for potential emission calculations, the flare efficiency of 95% was considered. The pilot burns only 16 standard cubic feet per hour of natural gas and has insignificant emissions. The flare operates in compliance with the applicable provisions specified in 401 KAR 63:015, Flares.

Emissions Documentation:

Emission factors for the compressor engines were from AP-42 and those supplied by the manufacturer.
Potential emissions for dehydrator reboiler are calculated using EPA’s AP-42 factors for natural gas combustion equipment.

Potential VOC and HAP emissions from the dehydration unit are estimated using GRI-GLY Calc Version 4.0.
Emissions from the small storage tanks are insignificant as they are less than 10,567 gallons capacity and hold less than 1.5 psi vapor pressure materials.

Applicable Regulations:

40 CFR 63 Subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities as incorporated by reference in 401 KAR 63:002. The Wildcat Station will be an area source of HAP emissions. This station processes natural gas in a glycol dehydrator prior to the point of custody transfer, therefore, the provisions of NESHAP Subpart HH apply to the Wildcat Station. Because the benzene emissions from the glycol dehydrator vent are less than 0.99 tpy and will remain at the same level after the proposed modification, the requirements of NESHAP Subpart HH will not apply to the Wildcat Station , pursuant to 40 CFR 63.764(e)(1)(ii), other than the requirement to keep records of the actual average natural gas flow rate or actual average benzene emissions from the dehydrator, per 40 CFR 63.774(d)(1).

40 CFR 63 Subpart ZZZZ, National Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines as incorporated by reference in 401 KAR 63.002. This Subpart is applicable to stationary reciprocating internal combustion engines (RICE) located in major and area source of HAPS. Wildcat Station is considered an area source and this subpart is applicable. The new proposed compressor engine and emergency generator will be a new source (installed on or after June 12, 2006) and shall be subjected to the requirements of Subpart ZZZZ. Since the existing compressor engines and the emergency generator were installed in July 2007, they shall be considered as new engines.

40 CFR 60 Subpart JJJJ, Stationary Spark Ignition Internal Combustion Engines. Subpart is applicable to manufacturers, owners, and operators of new stationary spark ignition internal combustion engines manufactured after July 1, 2007, for engines with maximum rated power capacity greater than 500 horsepower (hp). The existing compressors were manufactured prior to the date. The new 2370 bhp spark ignition compressor engine at the site was manufactured after July 1, 2007. This regulation is applicable to the new engine. To comply with this subpart, emissions for NOx, CO, and VOC must meet the relevant standards. The subpart applies to emergency generator engine manufactured after January 1, 2009. The new emergency generator engine will be manufactured prior this date, therefore this engine will not be subjected to this subpart.

401 KAR 63:015, Flares. The flare at the Wildcat Station was constructed after the rule applicability date of April 9, 1972. The permittee shall be subjected to the provisions of this rule. Pursuant to 401 KAR 63:015 Section 3, the opacity of the visible emissions from the flare stack shall not exceed 20% for more than 3 minute in any one day. Since only inlet and residue natural gas vapors will be combusted in the flare, the Wildcat Station will be in compliance with opacity limit at all times.

Non-Applicable Regulations:

40 CFR 63 Subpart HHH, Natural Gas Transmission and Storage Facilities. Pursuant to 40 CFR 63.1270, NESHAP Subpart HHH applies to natural gas transmission and storage facilities that are major sources of HAP. The Wildcat Station is a minor source of HAPS; the requirements of this subpart do apply to the station.

40 CFR 60 Subpart IIII, NSPS for Stationary Compression Ignition Internal Combustion Engines. Pursuant to 40 CFR 60.4200, NSPS Subpart IIII applies to compression ignition internal combustion engines: 1) with a model year of 2007 or later, 2) constructed after July 11, 2005 and manufactured after April 1, 2006, or 3) modified or reconstructed after July 11, 2005. The compressors at the Wildcat Station are spark ignition IC engines, and therefore the requirements do not apply.

40 CFR 60 Subpart LLL, NSPS for Onshore Natural Gas Processing: SO2 Emissions. Pursuant to 40 CFR 60.640, NSPS Subpart LLL applies to each sweetening unit and each sweetening unit followed by a sulfur recovery unit at onshore natural gas processing plants that commenced construction, reconstruction, or modification after July 20, 1984. The Wildcat Station does not contain a natural gas sweetening unit and therefore the requirements do not apply.

40 CFR 60 Subpart KKK, NSPS for Equipment Leaks of VOC from onshore Natural Gas Processing Plants. Pursuant to 40 CFR 60.630, Subpart KKK applies to onshore natural gas processing plants that commenced construction, reconstruction, or modification after January 20, 1984. The Wildcat Station was constructed after the applicability date, but does not meet the definition of a natural gas processing plant. The facility only boosts the pressure of the natural gas to pipeline quality standards. Therefore the requirements of Subpart KKK do not apply.

401 KAR 59:015, New Indirect Heat Exchangers. Pursuant to 401 KAR 59:015 applies to indirect heat exchangers having a heat input capacity of more than one million Btu per hour (mmBtu/hr). The compressors do not meet the definition of an indirect heat exchanger and the reboiler has a heat input capacity of 0.50 mmBtu/hr. Therefore the regulation does not apply to emission unit at the station.

401 KAR 59:050, New Storage Vessels for Petroleum Liquids. 410 KAR 59:050 applies to the following: 1) Petroleum liquid storage tank with a capacity less than 40, 000 gallons and commenced on or after April 9, 1972 and prior to July 24, 1984; or 2) Petroleum liquid storage tank with capacity less than 10,567 gallons and greater than 580 gallons commenced on or after July 24, 1984, which is located in a non-attainment county for ozone or in any other county and is part of major source of VOC. The capacity of the compressor oil storage tanks is less than 10,567 gallons and they were constructed after July 24, 1984; Knott County is attainment for all criteria pollutants and Wildcat Station is a minor source for VOC. Therefore the regulation does not apply to the petroleum liquid storage tanks at the station.

401 KAR 61:050, Existing Storage Vessels for Petroleum Liquids. Applies to each existing storage vessels of petroleum liquids which has a storage capacity of greater than 580 gallons, constructed before April 9, 1972, and which is located in a non-attainment county for ozone. Since Knott County is attainment for all criteria pollutants, the regulation will not apply to the storage tanks at the facility.

EMISSION AND OPERATING CAPS DESCRIPTION:

The permittee shall comply with source-wide annual VOC emission less than 90 tpy, individual HAP emission and combined HAPs emissions limitations of 9.0 tons and 22.5 tons per rolling 12-month period.

PERIODIC MONITORING:

Emission testing protocol, test data and results determining PM, VOC and HAP emissions identified in the application are to be maintained on site for the life of the source. These tests shall be evaluated every five years for applicability and accuracy. The actual benzene emissions from the dehydration unit will be monitored and shall be below 0.99 ton per year. A weekly log of the visible emissions check along with any record of Method 22 testing performed for the flare shall be maintained.

OPERATIONAL FLEXIBILITY:

None

CREDIBLE EVIDENCE:

This permit contains provisions that require specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.